

REMARKS

1. Status of the Claims:

Claims 1, 6, 26-29, 32-36 and 39 are pending in the application.

As indicated in the final Office Action mailed on November 24, 2008, the Examiner rejected claims 1, 6, 26-29, 32-36 and 39.

2. Response under 35 CFR 1.116

In response to the final Office Action, reconsideration of the final rejection and amendment of the claims is requested

Previously presented claims 1 and 6 are proposed to be amended.

This response seeks to convince the Examiner to remove the rejection of the claims in the final Office action, or failing that to place the claims (as amended) in better form for appeal.

The response is being filed within two months of the mailing date of the final Office Action.

3. The proposed amendments to claims 1 and 6 should be entered.

The proposed amendments to independent claims 1 and 6 simply correct obvious typing errors and therefore should be entered.

4. Claim Rejections - 35 USC § 103

Claims 1, 6, 26-27, 29, 33-34 and 36 are rejected under 35 U.S.C. 103(a) as being anticipated by Sawada (JP 8-39860) in view of Ng et al. (US 5,818,501) and Uebbing et al. (US 4,982,203).

Claims 28 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada (JP 8-39860) in view of Ng et al. (US 5,818,501) and Uebbing et al. (US 4,982,203) as applied to claims 1 and 6 and further in view of Kawabe et al. (US 5,812,176).

Claims 32 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada (JP 8-39860) in view of Ng et al. (US 5,818,501) and Uebbing et al. (US 4,982,203) as applied to claims 1 and 6 and further in view of Bollandsee et al. (US 5,640,190).

4.1 The Examiner's analysis of his apparent reason to combine Sawada and Ng et al. should be made more specific in order to facilitate review. This is a PTO requirement.

In unobvious contrast to claims 1 and 6, the certified translation of Sawada does not teach or suggest that a light-output (as in claim 1) or radiation emission (as in claim 6) correction for LED's in a chip is "repeated" each time "in response to an exposure requirement change in the printer that is within a full exposure range of the printhead". Moreover, the certified translation of Sawada teach or suggest altering the light output or radiation emission "each time light-output [or emission] corrections are calculated in response to an exposure requirement change in the printer that is within a full exposure range of the printhead".

It is noted that in Sawada steps S11-S16 are performed "repeatedly" when the driving current is changed (step S17). However, the driving current is changed only when the virtual average exposure energy EA and the target value E0 are not in agreement with each other. Once in step S16 the virtual average exposure energy EA becomes in agreement with the target value E0, the method comes to an end. See [0021] and [0024] in Sawada. However, this materially differs from the recitation in claims 1 and 6 that a light-output (as in claim 1) or radiation emission (as in claim 6) correction for LED's in a chip is "repeated" each time "in response to an exposure requirement change in the printer that is within a full exposure range of the printhead" and that the light output or radiation emission is altered "each time light-output [or emission] corrections are calculated in response to an exposure requirement change in the printer that is within a full exposure range of the printhead".

The Examiner agrees with the foregoing omission in Sawada.

Consequently, the Examiner draws on Ng et al. and concludes it would be obvious to modify Sawada in view of Ng et al. in order to supplement the foregoing omission in Sawada. In this connection, the Examiner simply states "It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Sawada by incorporating the teaching of Ng et al. for performing the calibration of the light emitting elements each time a global exposure change is required such that normal production printing can continue without diminishing the quality of the image". Thus, the Examiner seems to be urging that his apparent reason for combining Ng et al.

with Sawada is only that "normal production printing can continue without diminishing the quality of the image". This is believed to be insufficient. In formulating a rejection under 35 U.S.C. 103(a) based upon a combination of prior art elements, it is necessary to identify the apparent reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed. "To facilitate review, the analysis *should be made explicit*." (Emphasis added by PTO.) Moreover, the "teaching, suggestion, or motivation test" continues to provide a helpful insight in this connection.

Accordingly, the Examiner is requested to provide an explicit analysis in support of his conclusion in order that the Applicant can meaningfully respond.

4.2 The Examiner in combining Sawada with Ng et al. only on the basis that "normal production printing can continue without diminishing the quality of the image" ignores the teaching in Sawada that once in step S16 the virtual average exposure energy EA becomes in agreement with the target value E0, the method comes to an end.

In Sawada steps S11-S16 are performed "repeatedly" when the driving current is changed (step S17). However, the driving current is changed only when the virtual average exposure energy EA and the target value E0 are not in agreement with each other. Once in step S16 the virtual average exposure energy EA becomes in agreement with the target value E0, the method comes to an end. See [0021] and [0024] in Sawada. This materially differs from the recitation in claims 1 and 6 that a light-output (as in claim 1) or radiation emission (as in claim 6) correction for LED's in a chip is "repeated" each time "in response to an exposure requirement change in the printer that is within a full exposure range of the printhead" and that the light output or radiation emission is altered "each time light-output [or emission] corrections are calculated in response to an exposure requirement change in the printer that is within a full exposure range of the printhead".

The Examiner combines Sawada with Ng et al. in an attempt to arrive at the recitation in claims 1 and 6 that a light-output (as in claim 1) or radiation emission (as in claim 6) correction for LED's in a chip is "repeated" each time "in response to an exposure requirement change in the printer that is within a full exposure range of the printhead" and that the light output or radiation emission is altered "each time light-output [or emission] corrections are calculated in

response to an exposure requirement change in the printer that is within a full exposure range of the printhead". The combination is made only on the basis that "normal production printing can continue without diminishing the quality of the image". However, this ignores the teaching in Sawada that once in step S16 the virtual average exposure energy EA becomes in agreement with the target value E0, the method comes to an end.

4.3 The Examiner in attempting to modify Sawada using Ng et al. ignores the different specifics in each reference and fails to explain how Sawada would be modified. Thus, an explicit analysis in this connection is requested.

The Examiner in applying Ng et al. relies on FIG. 9 and col. 9, lines 13-67, in Ng et al. FIG. 9 depicts a flowchart a method for use in providing adjustments to correction tables for correcting non-uniformity of light output from the LEDs in a printhead during normal use of the printhead. The correction for nonuniformity of light output from the LEDs is accomplished by adjusting exposure times of the LEDs (by controlling the duration of current supplied to each LED) so that the LEDs output a uniform amount of exposure energy.

With reference to the flowchart of FIG. 9 during normal use of the printer the MEG 30 is programmed to create a process control mode for determining if the printhead is still within the calibration specification. See col. 13, lines 13, to col. 14, line 42. In this connection, a determination is made in FIG. 9 whether or not a "global exposure change" is needed is based on such criteria as whether readings from the patches from all the driver chips indicate that a change to the current in all the driver chips would result in returning exposure to within the calibration specification. How this teaching in Ng et al. can modify Sawada to arrive at the recitation in claims 1 and 6 that a light-output (as in claim 1) or radiation emission (as in claim 6) correction for LED's in a chip is "repeated" each time "in response to an exposure requirement change in the printer that is within a full exposure range of the printhead" and that the light output or radiation emission is altered "each time light-output [or emission] corrections are calculated in response to an exposure requirement change in the printer that is within a full exposure range of the printhead" is not understood.

The Examiner in attempting to modify Sawada using Ng et al. ignores the different specifics in each reference and fails to explain how Sawada would be modified. Compare the foregoing description regarding FIG. 9 of Ng et al. with

the description of Sawada on pages 2-3 of the Office Action. The Applicant is left to second-guess the Examiner. Thus, an explicit analysis in this connection is requested.

4.4 The Examiner's proposed substitution of the time correction bit that is temporarily allocated on the basis of the measured light emission quantity of each LED in Sawada with a correction of the amplitude of the driving current pulse for each LED in Uebbing et al. is an unlikely one when considered in the context of Sawada

The Examiner in rejecting claims 1 and 6 states that "Sawada teaches adjusting the time duration of the modulated current to correct for the light output of the LED and thus fails to teach the correction of the light output from each LED subset being a function of more or less applied voltage nor more or less supplied current".

Then he goes on to argue that if one altered the magnitude of the supplied current or the pulse width of the modulated current in Sawada, this would be the same as adjusting the time duration of the modulated current to correct for the light output of the LED in Sawada. The basis for this change to Sawada is that it is well known in the art that "one can adjust the light quantity output of the LED by altering either the magnitude of the supplied current or the pulse width of the modulated current".

However, such reasoning appears to ignore the disclosure in Sawada that on the basis of the measured light emission quantity of each LED (S12) the time correction bit for each LED is virtually allocated (S13). Then, the exposure energy of each LED is computed on the basis of the applied driving current for each LED and the temporarily allocated time correction bit (S14). See [0019] in Sawada.

In this connection, the Examiner proposes on page 9 of the Office Action to substitute the time correction bit that is temporarily allocated (S13) on the basis of the measured light emission quantity of each LED (S12) with a correction of the amplitude of the driving current pulse for each LED, citing Uebbing et al. However, such a proposed substitute is an unlikely one when considered in the context of Sawada. Sawada is dependent on an approach that uses a time correction bit that is temporarily allocated (S13) on the basis of the measured light emission quantity of each LED.

4.5 The Dependent Claims


For the sake of brevity, and since claims 1 and 6 are urged to be patentable over the cited references, discussion of the patentability of the remaining dependent claims that stem from claims 1 and 6 is not now presented. Suffice it to say that the remaining dependent claims that stem from claims 1 and 6 are patentable over the cited references at least for the foregoing reasons that claims 1 and 6 are believed to be patentable.

However, the Applicant reserves the right to address each of the remaining dependent claims that stem from claims 1 and 6 in regard to the cited references.

CONCLUSION

This response seeks to convince the Examiner to remove the non-final rejection of the claims. Failing that, the Examiner is requested to call the undersigned Attorney for Applicant(s) in the event that a telephone interview will expedite prosecution of the application towards allowance or reduce the issues for purposes of an appeal. Also, any suggestion for amending the claims in regard to allowability, which the Examiner cares to offer, would be appreciated.

Respectfully submitted,


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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.